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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,716	04/11/2006	Heinrich Becker	3724.1004-000	1522
21005	7590	05/21/2009	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C.			NWAONICHA, CHUKWUMA O	
530 VIRGINIA ROAD			ART UNIT	PAPER NUMBER
P.O. BOX 9133			1621	
CONCORD, MA 01742-9133				
MAIL DATE	DELIVERY MODE			
05/21/2009	PAPER			

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/563,716	BECKER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	CHUKWUMA O. NWAONICHA	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 23 March 2009.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 22-24, 32 and 39-43 is/are pending in the application.  
 4a) Of the above claim(s) 44-52 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 22-24, 32 and 39-43 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

### ***Current Status***

1. This action is responsive to Applicants' amendment of 23 March 2009.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Claims 22-24, 32 and 39-43 are actively pending in the application.
4. The rejection of claims 22-24 and 39-43 under 35 U.S.C. 102(a) as being anticipated by Mekis et al., {One-Pot Synthesis of Highly Luminescent CdSe/CdS Core-Shell Nanocrystals via Organometallic and "Greener" Chemical Approaches, Journal of Physical Chemistry B (2003), 107(30), 7454-7462} for the reasons set forth in the previous Office Action of 12/19/2008 is withdrawn because the prior art does not anticipates or renders obvious the claimed invention.

The rejection claims 22-24 and 39-43 under 35 U.S.C. 102(a) as being anticipated by Riwotzki et al, {Liquid-phase synthesis of colloids and redispersible powders of strongly luminescing LaPO<sub>4</sub>:Ce,Tb nanocrystals, Angewandte Chemie, International Edition (2001), 40(3), 573-576} for the reasons set forth in the previous Office Action of 12/19/2008 is withdrawn in favor of a new rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 32 is rejected because the variables DCy and CCy are confusing. It is not clear what cyclic group with a donor atom Applicants are claiming. Also, the variables R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup> and R<sup>11</sup> are not in the formulas 49-52. Correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

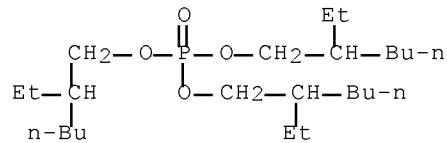
Claims 22-24, 32 and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riwotzki et al, {Liquid-phase synthesis of colloids and redispersible powders of strongly luminescing LaPO<sub>4</sub>:Ce,Tb nanocrystals, *Angewandte Chemie, International Edition* (2001), 40(3), 573-576} or Iacconi et al., {Thermoluminescence of a

mixed rare earth phosphate powder La<sub>1-x-y</sub>Ce<sub>x</sub>Tb<sub>y</sub>PO<sub>4</sub>, Optical Materials (Amsterdam, Netherlands) (2001), 17(3), 409-414}.

Applicants claim a mixture comprising at least one matrix material A and emission material B, and electronic component comprising the mixture; wherein all the variables are as defined in the claims.

**Determination of the scope and content of the prior art (M.P.E.P. §2141.01)**

Riwotzki et al. teach a mixture comprising the compound employed in electronic component shown below and emission material B: LaPO<sub>4</sub>:Ce,Tb.



**Ascertainment of the difference between the prior art and the claims (M.P.E.P.. §2141.02)**

Riwotzki et al. mixture differs from the instantly claimed mixture in that Riwotzki et al. mixture is subgenus of the instantly claimed mixture. Specifically, Applicants claim a mixture wherein the emission material B, which is capable of emission contain compounds with element of atomic number greater than 56 and less than 80, or selected from molybdenum, tungsten, rhenium, ruthenium, osmium, rhodium, iridium, palladium, platinum, silver, gold or europium while Riwotzki et al. teach a mixture wherein the emission material B is LaPO<sub>4</sub>:Ce,Tb.

**Finding of *prima facie* obviousness--rational and motivation (M.P.E.P. §2142-2143)**

The instantly claimed mixture would have been suggested to one of ordinary skill because one of ordinary skill wishing to obtain mixture capable of emission is taught to select the elements from the teaching of Riwotzki et al.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the elements from the teaching of Riwotzki et al. to arrive at the instantly claimed mixture. Said person would have been motivated to practice the teachings of the reference cited because it demonstrates that mixtures capable of emission are useful in industrial application. The instantly claimed invention would therefore have been obvious to one of ordinary skill in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Chukwuma O. Nwaonicha/  
Examiner, Art Unit 1621

/Karl J. Puttlitz/  
Primary Examiner, Art Unit 1621